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(54) Title: MODIFIED L49-sFv EXHIBITING INCREASED STABILITY AND METHODS OF USE THEREOF

(57) Abstract: The present invention relates to a modified L49 single chain antibody (L49-sFv) that exhibits increased refolding efficiency and/or greater stability in mouse serum, and surprisingly substantially maintains binding affinity for its binding ligand, p97 melanotransferrin. p97 melanotransferrin is expressed on the surface of a number of types of cancer (carcinoma) cells, *e.g.*, melanoma cells, lung cancer cells, renal cancer cells, colon cancer cells. The present invention also relates to a modified L49-sFv fused or conjugated to a therapeutic agent, such as a cytotoxic molecule or a pro-drug converting enzyme. The present invention also relates to methods of using the modified L49-sFv molecules fused or conjugated to a therapeutic agent for treatment and/or prophylaxis of cancer, which cancer cells express p97 melanotransferrin.

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